SECTION 2
PURPOSE AND NEED FOR ACTION

This section defines the purpose of the proposed action, including a brief history of activity related to the corridor, then goes on to explain in greater detail the need for the project in terms of growth in the area, current road conditions, the role of M-15 in the regional transportation system, travel demand and roadway capacity, and safety conditions.

2.1 Purpose of the Proposed Action

The purpose of the proposed project is to provide increased capacity and safety on M-15 between I-75 and I-69. Need has been generated by rapid growth in Oakland and Genesee counties, reflecting rapid economic expansion. M-15 needs four through travel lanes for the entirety of the corridor, to serve existing and projected travel demand and provide a safe road for the expanding corridor population.

2.1.1 Project Background

M-15 has been repeatedly studied and identified as a corridor in need of improvement.

In 1991 the "Northern Oakland County Corridor Study"[4] called for widening M-15 in Oakland County. (The study was limited to Oakland County.)

In 1995 MDOT completed a "Preliminary Project Statement" that called for repaving the entire corridor and widening M-15 in Oakland County to five lanes (with consideration of a boulevard). Safety analysis performed at that time concluded that the crash experience reflected a roadway with capacity and turning movement deficiencies. It also found the need for vertical alignment improvements, improved drainage, bridge repair, improvements to side slopes and sight distances, and reconstruction of the entire roadbed.

At the time of the "Preliminary Project Statement," interest grew and approximately 200 citizens attended a public meeting (September 1994) to provide their input on the need to improve M-15. An M-15 Task Force of local officials was also formed at that time. In 1997 the Task Force petitioned the U.S. Congress to provide funds for improving M-15. M-15 was listed as a "high priority project" in Section 1602 of the 1998 Transportation Equity Act for the 21st Century. That act provided $500,000 in funding for operational improvements on M-15 from I-75 north to the Oakland/Genesee County line.

2.2 Need for the Proposed Action

The project need is driven by the growth, predominantly residential growth in this area with convenient freeway access to job markets in Oakland County and, to a lesser extent, Genesee County.

[4] "Northern Oakland County Corridor Study," The Corradino Group, 1991.

2.2.1 Land Use and Growth

The rapid growth in the area was noted in Table 1-1. A substantial amount of vacant residential land will gradually fill in at rates determined by local authorities and the availability of sewers and water. A consequence of growth is increased congestion. For a two-lane rural highway, this means reduced opportunity to pass slower-moving traffic and less safety in doing so. Those entering M-15 from cross roads and driveways must accept shorter gaps in traffic and wait longer for such gaps. The result is a pattern of lower traffic service, decreasing safety and a decreasing quality of life. The inability to get onto M-15 was a concern of many citizens noted at a number of the public meetings held for the project.

The Village of Goodrich in its "State Road/M-15 Corridor Plan," the draft of which is dated April 1999, noted the village should act to improve access management along the corridor in the village. Brandon Township and the Village of Ortonville have requested that capacity and other operational improvements be made to M-15.

2.2.2 Current Road Conditions

M-15 is classified as a rural minor arterial. It is not part of the National Highway System, but is part of the Surface Transportation Program. Most of the roadway is two 12-foot lanes with eight-foot to ten-foot shoulders. Excluding Ortonville and Goodrich, 22 percent of M-15 has passing sight restrictions. The forty-foot, four-lane section of M-15 through Goodrich is in 66 feet of right-of-way. That portion of M-15 was re-striped in 1999 from four lanes to three (center turn-lane configuration) with some curb added. M-15 was repaved in Genesee County in 1999 and in Oakland County in 2000. Minor improvements to shoulders and guard rails occurred at these times. Traffic signals have been added as congestion has increased. Despite the excellent surface and shoulder conditions brought by the recent paving, the condition of the roadway base is uneven. Sufficiency ratings for 1999, prorated for subsection lengths, show a mix of conditions from excellent to poor:

- Surface 25 of a possible 25 points (excellent structural condition – reflects recent paving)
- Base 8 of a possible 15 points (poor structural condition)
- Capacity 5 of a possible 30 points (heavy congestion)
- Crashes 13 of a possible 30 points (above normal range)
- Total 51 of a possible 100 sufficiency points

2.2.3 Transportation System Linkages

Historically, M-15 was a weekend and hunting season path to the north. When I-75 opened, traffic on M-15 was reduced. But, as I-75 became more congested and growth occurred along M-15, its position in the network of state trunklines has returned to its earlier importance. To the south, M-15 originates at Dixie Highway (US 24). From Dixie Highway to I-75, M-15 is Clarkston's main street. From I-75 north it serves travel north to Davison, Vassar, and Bay City. The presence of I-75, however, makes the interstate the preferred route. M-15 is competitive from a regional standpoint only north to Davison. Any trip further north and accessible to I-75 would be made on I-75.

The closest parallel state roads to M-15 are M-54, 7 miles to the west, and M-24, 10 miles to the east. Dixie Highway and I-75 offer alternative travel paths that also serve regional trips. M-15 is

the only paved, continuous road between I-75 and I-69 apart from M-54 and M-24, so it collects most of the trips reaching the interstate system.

Although M-15 is a state trunkline, it serves primarily local traffic. Travel modeling indicates less than 30 percent of M-15 traffic is through travel. Truck percentages are low for a trunkline route - less than five percent.

2.2.4 Traffic and Level of Service

A Traffic Report[5] found a need for four through travel lanes throughout the corridor in the design year of 2025 (Appendix B). Generally a two-lane road can carry about 14,400 vehicles a day in a semi-rural setting with two intersections per mile. This volume reflects a Level of Service (LOS) of C. Absolute capacity is about 15,600 vehicles a day. (Note that a LOS of A represents free-flow conditions and LOS F reflects a breakdown of traffic flow.) Figure 1-1 shows that existing volumes already exceed LOS D in the southern section of the corridor and the forecast of future volumes demonstrates the need for four through lanes. A four-lane divided road will carry over 30,000 vehicles a day at LOS C, while a five-lane section will carry slightly fewer. The proposed project will operate at LOS C or better.

The Level of Service at intersections for existing conditions and future build and no-build conditions is presented on Table 2-1. That analysis is guided by turning movement counts made during the winter of 2000/01. These counts were expanded to 2025 based on growth factors derived from computer simulations of M-15 traffic in 2025.

Twenty-eight intersections along M-15 were examined in the traffic analysis. Currently, nine intersections are operating lower than LOS C. None of these is presently signalized. If M-15 were not widened, six of these intersections would appear to warrant a traffic signal by 2025. But, even if these signals were installed, 15 of the 28 intersections would operate in 2025 lower than LOS C, with 12 at LOS E or F. However, if M-15 were widened, no intersection would operate lower than LOS C.

2.2.5 Crashes

An analysis of crashes by MDOT from 1989 to 1993 found the leading crash type in Oakland and Genesee counties to be rear-end collisions. More recent data provided by the Traffic Improvement Association of Oakland County indicate that this pattern has continued. Rear-end collisions result from one vehicle following too close to another in congested traffic. Data for Michigan indicate two-lane roads have a total crash rate of 541 crashes per hundred million vehicle miles, compared to 323 for four-lane divided roads and 717 for a five-lane road. It is estimated that the Preferred Alternative would experience 644 total crashes in the year 2025 compared to 707 with no project. The median of the boulevard section reduces the potential for head-on collisions by separating opposing traffic and reduces the number of conflict points. Safety benefits will accrue from the time the project opens to traffic.

[5] "Traffic Report, M-15—I-75 to I-69," The Corradino Group, November 2001.

Table 2-1
Signalization and Level of Service

Cross Road	M-15 Build Condition	Existing Traffic Control	Future Traffic Control	Level of Service		
				Existing 2000	No Action 2025	Build 2025
Lippincott	Five-lane	Signal	Signal	B	C	A
Atherton	Five-lane	None	Signal	F	A	A
Bristol	Five-lane	Flasher	Signal	F	D	A
Maple	Five-lane	None	None	C	F	B
Hill	Boulevard	None	Signal	C	B	C
Perry	Boulevard	None	Signal	C	B	B
Coolidge	Boulevard	None	None	C	E	B
East Hegel	Five-lane	Flasher	Signal	D	B	A
West Hegel	Five-lane	Signal	Signal	B	C	A
Green	Five-lane	None	None	D	F	A
Kipp	Boulevard	None	None	B	C	B
County Line	Boulevard	None	None	C	D	B
Groveland	Boulevard	None	None	B	D	B
Oakwood	Boulevard	None	Signal	F	C	B
Mill/Grange Hall	Boulevard	Signal	Signal	B	B	B
South	Boulevard	Signal	Signal	B	C	A
Granger/Kent	Boulevard	Signal	Signal	A	B	A
Wolfe	Boulevard	None	None	C	E	B
Brandon High School Entrance	Boulevard	Signal	Signal	A	B	B
Glass	Five-lane	Signal	Signal	B	F	A
Seymour Lake	Five-lane	Signal	Signal	C	E	C
Oak Hill	Boulevard	None	None	F	F	C
Hadley/Ratalee Lake	Boulevard	None	None	F	F	B
Hubbard	Boulevard	Signal	Signal	B	E	B
Deer Ridge	Boulevard	Signal	Signal	C	E	B
Berry Point	Boulevard	None	None	E	F	A
Cranberry Lake	Five-lane	Signal	Signal	B	B	A
Amy	Five-lane	None	None	F	F	B

Source: The Corradino Group

2.2.6 Conclusion

M-15 is experiencing congestion that is gradually working its way north from Oakland to Genesee Counties. Delays are increasing and safety is deteriorating as this happens. Under the No Action Alternative, all portions of the corridor will experience traffic much greater than a rural two-lane road can handle at LOS E with many intersections at breakdown conditions. With the Preferred Alternative, M-15 will operate at LOS C or better over its entire length in the design year 2025. Other alternatives examined would not meet the project's purpose and need of increased capacity and safety and rapid economic growth within the corridor.